

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

① **BLACK BORDERS**

- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

THIS PAGE BLANK (USPTO)

THOMSON

DELPHION

RESEARCH

PRODUCTS

INSIDE DELPHION

[Home](#) [About Delphion](#) [My Account](#) [Products](#)Search: [Quick/Number](#) [Boolean](#) [Advanced](#)

The Delphion Integrated View

Get Now: ☒ PDF | [More choices...](#)Tools: Add to Work File: [Create new Wor](#)View: [INPADOC](#) | Jump to: [Top](#)  Go to: [Derwent...](#) [Ema](#)Title: **JP11260372A2: MANUFACTURE OF NONAQUEOUS SECONDARY B**Country: **JP Japan**Kind: **A**Inventor: **FURUKAWA SANEHIRO;
FUJIMOTO MASAHISA;
YOSHINAGA NORIYUKI;
UENO KOJI;**Assignee: **SANYO ELECTRIC CO LTD**
[News, Profiles, Stocks and More about this company](#)Published / Filed: **1999-09-24 / 1999-01-14**Application Number: **JP1999000008215**IPC Code: **H01M 4/66; H01M 2/02; H01M 4/02; H01M 10/40;**Priority Number: **1999-01-14 JP1999019998215**

Abstract:

.... PROBLEM TO BE SOLVED: To improve the cycle characteristic and load characteristic, while preventing the elution of a collector by constructing a positive electrode collector and/or a positive electrode armor of aluminum with aluminum oxide coating on the surface and having lithium intercalate into a negative electrode material by injecting an electrolyte.

.... SOLUTION: A positive electrode collector is constructed of an aluminum foil with the surface covered with aluminum oxide. By mixing petroleum coke with N-methylpyrrolidone solution, in which polyvinylidene fluoride is dissolved, a mixed solution is prepared. Next, by applying this mix solution to a negative electrode collector made of copper foil and then bringing the negative collector into contact with lithium foil, a negative electrode 2 is formed. Lithium on the negative electrode 2 is intercalated into the petroleum coke serving as a negative electrode material after injecting the electrolyte. Then, a separator 3 is arranged between the positive electrode 1 and the negative electrode 2, and these are wound up into a spiral shape and form a group 4 of electrodes.

.... COPYRIGHT: (C)1999,JPO

Family: **None**Other Abstract Info: **DERABS C1999-596408 DERABS C1999-596408**



[Nominate](#)

[this for the Gallery...](#)

© 1997-2003 Thomson Delphion

[Research Subscriptions](#) | [Privacy Policy](#) | [Terms & Conditions](#) | [Site Map](#) | [Contact](#)

THOMSON
DELPHION

RESEARCH

PRODUCTS

INSIDE DELPHION

[Home](#) [About Us](#) [Contact Us](#) [My Account](#) [Products](#)Search: [Quick/Number](#) [Boolean](#) [Advanced](#)

The Delphion Integrated View

Get Now: ☒ PDF | [More choices...](#)Tools: Add to Work File: [Create new Wor](#)View: INPADOC | Jump to: [Top](#)  Go to: [Derwent...](#) [Ema](#)Title: **JP11260372A2: MANUFACTURE OF NONAQUEOUS SECONDARY B**Country: **JP Japan**Kind: **A**Inventor: **FURUKAWA SANEHIRO;
FUJIMOTO MASAHISA;
YOSHINAGA NORIYUKI;
UENO KOJI;**Assignee: **SANYO ELECTRIC CO LTD**
[News, Profiles, Stocks and More about this company](#)Published / Filed: **1999-09-24 / 1999-01-14**Application Number: **JP1999000008215**IPC Code: **H01M 4/66; H01M 2/02; H01M 4/02; H01M 10/40;**Priority Number: **1999-01-14 JP1999019998215**

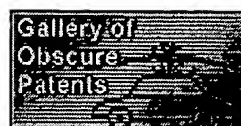
Abstract:

PROBLEM TO BE SOLVED: To improve the cycle characteristic and load characteristic, while preventing the elution of a collector by constructing a positive electrode collector and/or a positive electrode armor of aluminum with aluminum oxide coating on the surface and having lithium intercalate into a negative electrode material by injecting an electrolyte.

SOLUTION: A positive electrode collector is constructed of an aluminum foil with the surface covered with aluminum oxide. By mixing petroleum coke with N-methylpyrrolidone solution, in which polyvinylidene fluoride is dissolved, a mixed solution is prepared. Next, by applying this mix solution to a negative electrode collector made of copper foil and then bringing the negative collector into contact with lithium foil, a negative electrode 2 is formed. Lithium on the negative electrode 2 is intercalated into the petroleum coke serving as a negative electrode material after injecting the electrolyte. Then, a separator 3 is arranged between the positive electrode 1 and the negative electrode 2, and these are wound up into a spiral shape and form a group 4 of electrodes.

COPYRIGHT: (C)1999,JPO

Family: **None**Other Abstract Info: **DERABS C1999-596408 DERABS C1999-596408**



[Nominate](#)

[this for the Gallery...](#)

© 1997-2003 Thomson Delphion

[Research Subscriptions](#) | [Privacy Policy](#) | [Terms & Conditions](#) | [Site Map](#) | [Contact](#)



(19)

(11) Publication number: **11**

Generated Document.

PATENT ABSTRACTS OF JAPAN(21) Application number: **11008215**(51) Intl. Cl.: **H01M 4/66 H01M 2/02 H01M 10/40**(22) Application date: **14.01.99**

<p>(30) Priority:</p> <p>(43) Date of application publication: 24.09.99</p> <p>(84) Designated contracting states:</p>	<p>(71) Applicant: SANYO ELECTRIC CO</p> <p>(72) Inventor: FURUKAWA SANEHIRO FUJIMOTO MASAHIRO YOSHINAGA NORIYUK UENO KOJI</p> <p>(74) Representative:</p>
---	--

**(54) MANUFACTURE OF
NONAQUEOUS
SECONDARY BATTERY**

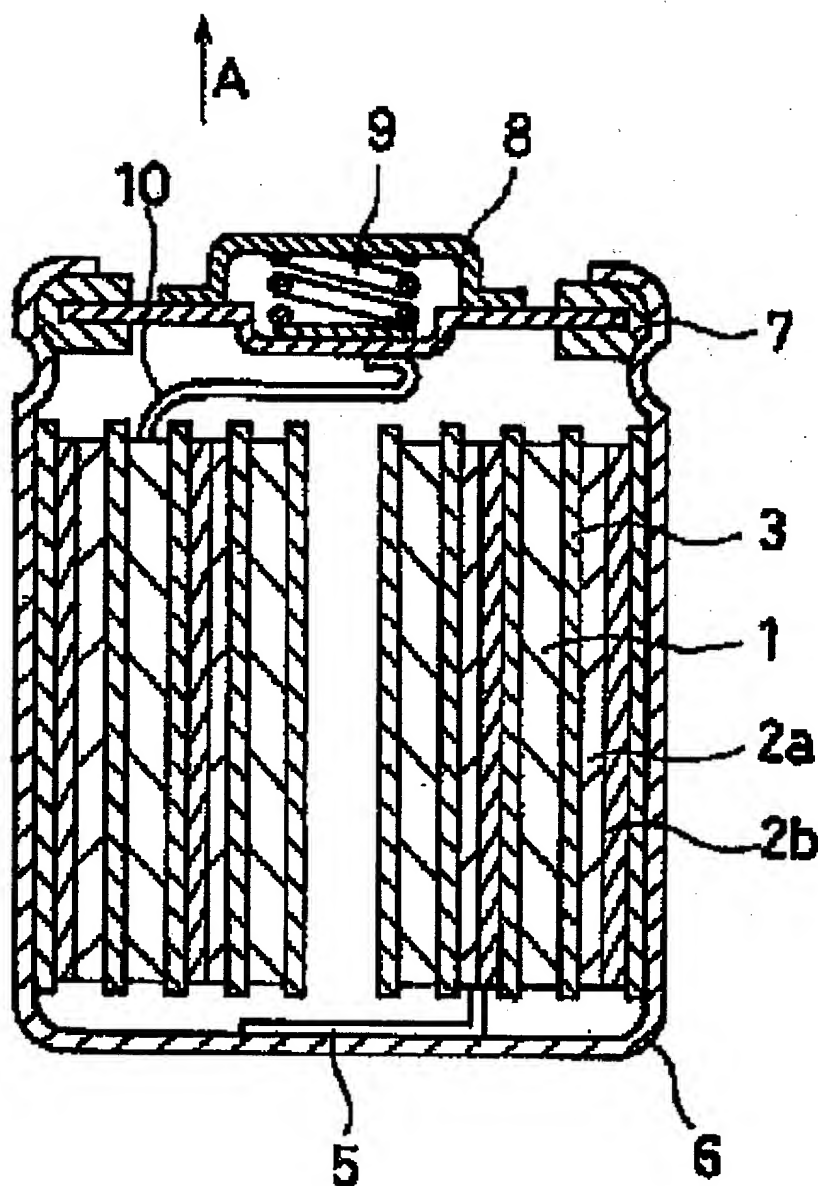
(57) Abstract:

PROBLEM TO BE SOLVED: To improve the cycle characteristic and load characteristic, while preventing the elution of a collector by constructing a positive electrode collector and/or a positive electrode armor of aluminum with aluminum oxide coating on the surface and having lithium intercalate into a negative electrode material by injecting an electrolyte.

SOLUTION: A positive electrode collector is constructed of an aluminum foil with the surface covered with aluminum oxide. By mixing petroleum coke with N-methylpyrrolidone solution, in which polyvinylidene fluoride is dissolved, a mixed solution is prepared. Next, by applying this mix solution to a

negative electrode collector made of copper foil and then bringing the negative collector into contact with lithium foil, a negative electrode 2 is formed. Lithium on the negative electrode 2 is intercalated into the petroleum coke serving as a negative electrode material after injecting the electrolyte. Then, a separator 3 is arranged between the positive electrode 1 and the negative electrode 2, and these are wound up into a spiral shape and form a group 4 of electrodes.

COPYRIGHT: (C)1999,JPO





(19)

(11) Publication number: **11**

Generated Document.

PATENT ABSTRACTS OF JAPAN(21) Application number: **11008215**(51) Intl. Cl.: **H01M 4/66 H01M 2/02 H01M 10/40**(22) Application date: **14.01.99**

(30) Priority:	(71) Applicant: SANYO ELECTRIC CO
(43) Date of application publication: 24.09.99	(72) Inventor: FURUKAWA SANEHIRO FUJIMOTO MASAHIRO YOSHINAGA NORIYUK UENO KOJI
(84) Designated contracting states:	(74) Representative:

**(54) MANUFACTURE OF
NONAQUEOUS
SECONDARY BATTERY**

(57) Abstract:

PROBLEM TO BE SOLVED: To improve the cycle characteristic and load characteristic, while preventing the elution of a collector by constructing a positive electrode collector and/or a positive electrode armor of aluminum with aluminum oxide coating on the surface and having lithium intercalate into a negative electrode material by injecting an electrolyte.

SOLUTION: A positive electrode collector is constructed of an aluminum foil with the surface covered with aluminum oxide. By mixing petroleum coke with N-methylpyrrolidone solution, in which polyvinylidene fluoride is dissolved, a mixed solution is prepared. Next, by applying this mix solution to a

negative electrode collector made of copper foil and then bringing the negative collector into contact with lithium foil, a negative electrode 2 is formed. Lithium on the negative electrode 2 is intercalated into the petroleum coke serving as a negative electrode material after injecting the electrolyte. Then, a separator 3 is arranged between the positive electrode 1 and the negative electrode 2, and these are wound up into a spiral shape and form a group 4 of electrodes.

COPYRIGHT: (C)1999,JPO

